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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/756,957

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Durga P. Malladi

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QUALCOMM INCORPORATED  
5775 MOREHOUSE DR.  
SAN DIEGO, CA 92121

EXAMINER

HUYNH, NAM TRUNG

ART UNIT

PAPER NUMBER

2617

NOTIFICATION DATE

DELIVERY MODE

02/18/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

us-docketing@qualcomm.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/756,957	<b>Applicant(s)</b> MALLADI ET AL.	
	<b>Examiner</b> NAM HUYNH	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,7-12,18-23,29-34,39 and 45-71 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,7,9-12,18,20-23,29,31-34,39 and 45-71 is/are rejected.
- 7) ☒ Claim(s) 8,19 and 30 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendment*

This office action is in response to amendment filed on 11/16/10. No amendments were made to the previously presented claims.

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1, 7-12, 18-23, 29-34, 39, and 45-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US 7,286,558) in view of Karlsson et al. (US 2002/0057730).

Regarding claim 1, Kim teaches a method for evaluating packets and frames in a wireless communication system having a burst oriented channel (Supplemental channel (SCH)), and a corresponding rate indicator channel (Reverse Rate Indicator Channel (R-RICH)), the method comprising (column 1, lines 45-50; column 4, lines 20-30):

monitoring the rate indicator channel (after transmitting max data rates and number of SCHs to the mobile station the base station monitors the R-RICH for data rate information from the mobile station) (column 4, lines 31-56; column 5, lines 60-67; column 6, lines 1-37); and

determining the presence of a packet on the rate indicator channel (presence or absence of data on a R-RICH) (column 4, lines 20-30).

However, Kim does not explicitly teach that the presence of a packet is determined based on a likelihood generated by a maximum likelihood decoder that decodes the rate indicator channel. Karlsson discloses a method for determining whether a zero rate or non-zero rate transmission has occurred (abstract). Karlsson teaches that zero rate spreading factor detectors determines whether a zero rate or non-zero rate transmission (presence of a packet) has occurred. The detector (decoder) does this by comparing a threshold factor (maximum) to a Likelihood Ratio (likelihood) (paragraphs 74-84). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Kim to include zero rate spreading factor detectors of Karlsson, in order to accurately detect all spreading factors including a zero rate spreading factor thereby reducing interference signals.

Regarding claims 45, 51, 56, 61, and 65, Karlsson teaches the method of claim 1, wherein determining the presence of a packet is performed at predetermined intervals (estimation period) (paragraph 77).

Regarding claims 46, 52, 57, 62, and 66, Karlsson teaches the method of claim 45, wherein the interval is a subframe interval (paragraphs 181-188).

Regarding claims 47, 53, 58, 63, and 67, Karlsson teaches the method of claim 45, further comprising determining the validity of a frame (a valid frame would be a non-zero rate transmission) (paragraph 83).

Regarding claims 48, 54, 59, 64, and 68, Karlsson teaches the method of claim 47, wherein determining the validity of a frame comprises analyzing the packet if the packet is detected (paragraphs 74-84).

Regarding claims 9, 20, and 31, Kim teaches the method of claim 48 wherein analyzing the packet further comprises comparing the packet with an expected packet type (R-RICH sequence) if the packet is a zero-rate packet (column 6; Table 2 SCH data rate 0 kbps).

Regarding claims 10, 21, and 32, Karlsson teaches the method of claim 9 wherein analyzing the packet further comprises detecting energy on the burst oriented data channel if the packet matches the expected packet type (paragraphs 51, 52).

Regarding claims 49, 55, and 60, Kim teaches the method of claim 48, wherein analyzing the packet further comprises determining if the packet is a zero-rate packet (SCH data rate 0 kbps, and analyzing a sub-packet ID and a payload if the packet is not

a zero-rate packet (R-RICH sequences that indicate SCH data rates A-G) (column 6; Table 2).

Regarding claims 11, 22, and 33, Karlsson teaches the method of claim 47 wherein determining the validity of a frame further comprises detecting energy on the burst oriented channel if there is no packet on the corresponding rate indicator channel and no packet was expected (paragraphs 51, 52).

Regarding claim 50, Kim teaches the method of claim 1, wherein the packet does not include cyclical redundancy check (CRC) bits (R-RICH code sequence has no CRC bits) (column 4, lines 30-67; column 5, lines 1-60).

Regarding claim 12, the combination of Kim and Karlsson teaches a system for evaluating packets and frames in a wireless communication system, comprising:

- a base station (Kim; column 4, lines 22-30); and

- a mobile station coupled to the base station via a wireless communication link (Kim; column 4, lines 22-30);

- wherein the base station is configured to receive data from the mobile station on a plurality of reverse-link channels on the wireless communication link including a burst oriented channel (SCH), and a corresponding rate indicator channel (R-RICH) (Kim; column 1, lines 45-50; column 4, lines 20-30); and

- wherein the base station is configured to monitor the rate indicator channel (presence or absence of data on a R-RICH) (Kim; column 4, lines 20-30) and determine the presence of a packet on the rate indicator channel based on a likelihood generated

by a maximum likelihood decoder that decodes the rate indicator channel (Karlsson; paragraphs 74-84).

Regarding claim 23, the limitations are rejected as applied to claim 12.

Regarding claims 34 and 39, the limitations are rejected as applied to claim 1.

Regarding claim 69, Karlsson teaches the method of claim 1, wherein the determining the presence of the packet includes:

comparing the likelihood with a threshold (paragraph 82),

wherein the determination as to whether the packet is present is based on the comparison (paragraphs 83, 84).

Regarding claim 70, Karlsson teaches the method of claim 1, wherein the determining the presence of the packet includes:

identifying a codeword (spreading factor),

wherein the likelihood corresponds to the likelihood that the most likely codeword is present on the rate indicator channel (paragraphs 80, 81).

Regarding claim 71, Kim teaches the method of claim 1, wherein the rate indicator channel is a discontinuous transmission channel (each 20ms frame) (column 2, lines 10-14; column 5, lines 17-40).

#### ***Allowable Subject Matter***

4. Claims 8, 19, and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1, 7, 9-12, 18, 20-23, 29, 31-34, 39, and 45-71 have been considered but are moot in view of the new ground(s) of rejection.

6. Regarding claim 71, Applicant submits that the R-RICH of Kim is not a discontinuous transmission channel. The Examiner respectfully disagrees and submits that the data rate is transmitted at each 20ms frame, thereby discontinuously because it is transmitted every frame not non-stop.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NAM HUYNH whose telephone number is (571)272-5970. The examiner can normally be reached on 8 a.m.-5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George Eng/  
Supervisory Patent Examiner, Art Unit 2617

/Nam Huynh/  
Examiner, Art Unit 2617